Name:

Teacher:

Geometry, Period

**Geometry**

CW/HW#6: Linear Functions Review

Due: Tuesday, September 15th

When applicable, answer the following questions using complete sentences. Remember to show all work.

1. **T-Shirt Deal:** You can get 4 T-shirts for $3 at a special sale.

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| How much would 60 t-shirts cost? | | How many t-shirts could you get for $72? |
| Create a data table for this situation:   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | |
| Graph this situation.  What shape does this graph make?  What is the slope of this line? | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |

1. **Fitting Data with Linear Functions:** Assume that both the relationships below are linear.

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| |  |  | | --- | --- | | Year | Population | | 2002 | 23,400 | | 2006 | 27,800 |   *What will the population be in 2020?*  *What are the units for slope?* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | ***w*, number of weeks** | 0 | 2 | 4 | 6 | | ***P(w)*, number of rats** | 1000 | 1080 | 1160 | 1240 |   *How many rats will there be in 20 weeks?*  What are the units for slope? |

1. **Analyzing Tile Patterns:** 
   1. Find an equation that represents that pattern.
   2. Find the number of tiles in the 100th figure in each sequence.

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**4. Undefined Vs. Zero Slope**

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| A:   |  |  |  |  | | --- | --- | --- | --- | | x | 10 | 11 | 12 | | f(x) | 8 | 8 | 8 | | B:   |  |  |  |  | | --- | --- | --- | --- | | x | 2 | 2 | 2 | | g(x) | 5 | 6 | 7 | |
| 1. Create the equation for f(x) and g(x). Explain the differences. 2. Sketch a graph the two functions. What is the slope of each function. | |

**5. Linear Equations**:

A line passes through the point (6, 3) and has a slope of 4.

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| a. Find the value of *c* so that the point (1,c) lies on the line.  b. If (a, 2) also lines on the line, what is the value of a? |